

In the Specification:

Please amend the specification as follows:

Page 1, after the title insert:

CROSS-REFERENCE TO RELATED APPLICATIONS

The application claims priority to U.S. provisional patent application 60/405,701 filed 26 August 2002 and is the national phase under 35 U.S.C. § 371 of PCT/SE2003/001221.

Page 1, second paragraph:

It is known a system for sorting articles on a conveyor belt where the articles ~~passes~~ pass a detection area before entering a robot operation area. In the detection area the articles are identified by order of sort, position and orientation. This information is stored in a memory of the robot operating system. By this information the articles are picked, lifted and oriented by the robot and placed at a specified position in a reception area. A typical application of this system is picketing of chocolate pralines or cookies.

Page 1, third paragraph:

When working with heavier articles the picking process decreases due to acceleration forces.

The risk of dropping the article also increases. When working with articles, which have an uneven or rough surface the technique of lifting with vacuum gripper ~~become~~ becomes more difficult. A mechanical gripper is ~~havier~~ heavier, more ~~compleated~~ complicated and more expensive. A mechanical gripper is also less flexible.

Page 2, first full paragraph:

Thus there is a need in the industry for flexible handling of arbitrary articles in a continuous production flow.

Page 2, third paragraph:

~~This object is achieved according to the invention according to the features in the characterizing part of the independent claim 1 and according to a method as claimed in the independent claim 2. Preferred embodiments are described in the dependent claims.~~

Paragraph bridging pages 2 and 3:

According to the invention an ~~algorithm~~ algorithm is described for a selection of objects in a continuous production flow according to given sorting rules. A continuous production flow, which feeds objects into a robot working area is defined by the positive flow direction, hereafter named "X" and ~~it's~~ its perpendicular direction in the horizontal plane of a right-hand coordinate system, named "Y".

Page 3, first full paragraph:

All ~~objects~~ object information, such as position, orientation, type and size, ~~are~~ is stored in a buffer in an industrial robot controller. A new object is requested from the buffer when the robot is about to use the object as a target. The robot operation can only be performed when the object is within an entry and an exit limit of the X-direction. The robot controller supervises this. Within this work area it shall be possible to choose the object with respect to the priority rules in X- and Y- or/and Z-direction.

Page 5, sixth paragraph:

~~FIG~~ FIG. 1 is an operation area with a plurality of objects for selection. ~~selection,~~

Page 5, seventh paragraph:

The operating area in the embodiment showed in ~~the fig~~ FIG. 1 is defined by the edges of a conveyor belt, a check limit line and a entry line. The transport direction is in the embodiment shown perpendicular to the flow direction. Normally a flow of products for picking ~~arrive~~ arrives into a detection area (not shown) before entering the operation area. In the detection area all information of the articles ~~are~~ is defined. This information ~~contain~~ contains type of article, size, position, orientation and other desirable information. At a predetermined time calculated from the flow speed and the distance between the detection area and the operation area the

articles arrive into the operation area.

Paragraph bridging pages 5 and 6:

During this time the system ~~calculated~~ calculates the transport direction for each of the articles to a predetermined position when the articles have reached the operation area. Before reaching the operation area the system also ~~determine~~ determines a passageway for each of the articles, along which the article must be transported. The passageway can be seen as a tunnel. Prior to arrival into the operation area the system also ~~determine~~ determines if any of the other objects present penetrates these tunnels. Thus each of those articles which has a clear tunnel can be chosen. An ~~optimization~~ optimization program, having information on the speed of the flow, the performance of the manipulator and other information then chooses the optimal article for transport.

Page 6, first full paragraph:

In an embodiment of the invention the detection system is a vision system. By a camera or a plurality of cameras the position and orientation information is achieved for each article. All such information is stored in a computer memory. The vision system gets continuous information of the articles passing the detection area. Thus the same article may appear on a plurality of detection areas that are overlapping each other. This results in the operating area being adjusted and thus always ~~contain~~ containing actual information.

Page 6, second paragraph:

The information received in the detection area may be used to direct a plurality of manipulators along the conveyor line. In a vision system that ~~detect~~ detects the articles prior to arrival into the operation area it is essential that the articles remaining on the conveyor ~~remains~~ remain at the same position and in the same orientation. This means that when an article is picked up or shuffled sideways the remaining articles must not be moved or even ~~terched~~ touched. If one of the articles ~~are~~ is moved in one robot station its position will not be recognized in the next station.

Page 6, third paragraph:

The invention is not to be limited by the embodiments presented above. Thus the production flow can be circular, as when the articles are placed on a rotating plate. The conveyor can also be continuous, such that the articles are passing several times through the detection area. The predetermined target position can be on either side of the conveyor belt and there can be a plurality of target locations at the same operation area.